

REMARKS/ARGUMENTS

STATUS OF CLAIMS

In response to the Office Action dated July 7, 2008, claims 1, 2, 8, 10, 11 and 14 have been amended. Claims 1-11 and 14-21 are now active in this application. No new matter has been added.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 103

I. Claims 1-9 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Osaka et al. (U.S. Patent 6,023,277) in view of Lipton et al. (US 2002/0011969).

The rejections are respectfully traversed.

As noted in the previous response, claims 1 and 2 recite, *inter alia*:

wherein said control information includes the number of viewpoints for said three-dimensional image and at least i) camera arrangement information for image pick-up, ii) a direction of thinning during generation of said three-dimensional image from said two-dimensional image, iii) parallax amount shift limit information, iv) parallax image switching pitch information, v) image arrangement of said two-dimensional images corresponding to parallax images, and vi) reversal information on each of said parallax images; ...

That is, claims 1 and 2 require that the control information includes:

- i) camera arrangement information for image pick-up,
- ii) a direction of thinning during generation of said three-dimensional image from said two-dimensional image,
- iii) parallax amount shift limit information,
- iv) parallax image switching pitch information,
- v) image arrangement of said two-dimensional images corresponding to parallax images, and
- vi) reversal information on each of said parallax images.

This control information is included in a multimedia information file, examples of which are depicted in Figs. 1A and 19. By including the control information in the multimedia information file that is formed by a recording apparatus (see, for example, Fig. 2 of the present application), the image data reproduction apparatus (see, for example, Fig. 3 of the present application) will be able to know in which format the three-dimensional image data has been recorded and will be able to know the kind of processing that should be adopted for displaying the three-dimensional data (see page 3, lines 20-24 of the present application). This solves problems described at page 2, line 24 through page 3, line 24 of the present application. The problems discussed in the present application are not disclosed or suggested in Osaka et al.

Column 16, lines 11-28 of Osaka et al. describes:

... A three-dimensional image file 50 according to this embodiment includes a file header 51 representing the attributes of the above-mentioned image file, three-dimensional image data 52 composed of combined stripes, and two-dimensional image data 53 representing the distinctive two-dimensional state in a parallax image used in stripe synthesis. In general, file name, file creation date, file capacity, image format and image compression means are described in the file header. The application analyzes the header, reads in the image data and causes the computer to paint the image. By contrast, in the case of this embodiment, the information in the header is supplemented by data peculiar to a three-dimensional image, such as whether or not a three-dimensional image is to be displayed, the number of viewpoint images of the three-dimensional image, the amount of parallax of the three-dimensional image and whether or not a two-dimensional image is present.

Thus, Osaka discloses that the header includes:

- i) file name,
- ii) file creation date,
- iii) file capacity,
- iv) image format
- v) image compression means

- vi) data peculiar to a three-dimensional image, such as whether or not a three-dimensional image is to be displayed,
- vii) the number of viewpoint images of the three-dimensional image,
- viii) the amount of parallax of the three-dimensional image, and
- ix) whether or not a two-dimensional image is present.

No other information is disclosed or suggested by Osaka et al. as being included in the header of the information file. In particular, Osaka et al. neither discloses nor suggests that the control information includes the camera arrangement information for image pick-up, a direction of thinning during generation of said three-dimensional image from the two-dimensional image, parallax image switching pitch information, image arrangement of said two-dimensional images corresponding to parallax images, and reversal information on each of the parallax images.

In the present Office Action, the Examiner admits that Osaka et al. "fails to teach camera arrangement information for image pick-up" (see page 5, lines 1-2). Lipton et al. has been relied upon by the Examiner as teaching camera arrangement information for image pick-up. However, even if the information that the Examiner refers to were presumed to be the camera arrangement information recited in the claims, which Applicants do not believe is, neither Osaka et al. nor Lipton et al. discloses or suggests that the control information also includes a direction of thinning during generation of said three-dimensional image from the two-dimensional image, parallax image switching pitch information, image arrangement of said two-dimensional images corresponding to parallax images, and reversal information on each of the parallax images. Therefore, claims 1-9 are patentable over Osaka et al and Lipton et al.

At any rate, independent claim 1 has been amended to delineate, *inter alia*:

A multimedia information generation apparatus for generating a multimedia information *data file* including at least one two-dimensional image or character information and at least one three-dimensional image, comprising:

...
a multimedia information generation unit generating said multimedia information ***data file*** including said at least one two-dimensional image or character information and at least one three-dimensional image and said control information, wherein

said camera arrangement information for image pick-up discriminates between a parallel camera arrangement, a convergent camera arrangement and a divergent arrangement...

Independent claim 2 has been amended to recite similar subject matter.

Thus, amended independent claims 1 and 2 make it clear that the control information is in a multimedia information data file. Osaka et al. does not disclose or suggest all the recited control information is in a multimedia information data file. Amended independent claims 1 and 2 also make it clear that the camera arrangement information for image pick-up indicates one of a parallel camera arrangement, a convergent camera arrangement and a divergent arrangement. Such camera arrangement information is not disclosed in Lipton et al., let alone that it is in a multimedia information data file.

Thus, amended independent claims 1 and 2 further distinguish over Osaka et al. and Lipton et al.

II. Claims 10 and 11 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Osaka et al. in view of Akamatsu et al. (U.S. Patent 6,313,866), in further view of Lipton and in further view of Ellson et al. (U.S. Patent 5,805,783).

To expedite prosecution, independent claim 10 has been amended to delineate, *inter alia*:

A multimedia information reproduction apparatus reproducing multimedia information ***from multimedia information data files, each*** including at least one two-dimensional image or character information ***of two-dimensional page data*** and at least one three-dimensional image, comprising:

a generation unit generating a three-dimensional image from said two-dimensional image or character information *of two-dimensional page data*; and

a first synthesis unit synthesizing said three-dimensional image generated by said generation unit and the three-dimensional image included in said *each* multimedia information *data file*, wherein generating the three-dimensional image from said character information *of two-dimensional page data* includes thinning a horizontal resolution of the character information *of two-dimensional page data* to $1/n$ when a number of viewpoints for the three-dimensional image is n , and then making a line forming a portion of three-dimensional image to have one of a horizontal dimension and vertical dimension that is bolder than that of a line representing a corresponding portion of the character information *of two-dimensional page data*.

In Lipton et al., the data that is thinned is input by camera 601 having three heads 607, 608, 609. This is different from the character information *of two-dimensional page data* that is thinned in amended independent claim 10. Furthermore, the master images that are thinned in Lipton et al. are the images created in a perspective sequence by a multiple camera array that are combined to form the three-dimensional images of the stereoscopic image. This is different from the at least one two-dimensional image that is 2D/3D converted by the 2D/3D conversion unit. That is, no one image of the perspective sequence of Lipton et al. is 2D/3D converted.

Neither Osaka et al., Akamatsu et al., Lipton et al. nor Ellson et al. discloses or suggests generating the three-dimensional image from the character information *of two-dimensional page data* includes thinning a horizontal resolution of the character information $1/n$ when a number of viewpoints for the three-dimensional image is n . Therefore, claims 10 and 11, as amended, are patentable over Osaka et al., Akamatsu et al., Lipton et al. and Ellson et al.

III. Claims 14-21 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Osaka et al. in view of Iizuka et al. (U.S. Patent 6,657,655), in further view of Akamatsu, in further view of Lipton and in further view of Ellson et al.

To expedite prosecution, independent claim 14 has been amended to delineate, *inter alia*:

A multimedia information reproduction apparatus reproducing multimedia information *from multimedia information data files, each* including a plurality of sets of at least one two-dimensional image or character information and at least one three-dimensional image, comprising:

a page data decoding unit decoding graphic and character information included in said *each* multimedia information *data file* to obtain a page image;

a 2D/3D conversion unit converting said page image into a three-dimensional image; and

a first synthesis unit synthesizing the three-dimensional image generated by said 2D/3D conversion unit and the three-dimensional image included in said *each* multimedia information *data file*;

a second synthesis unit synthesizing a plurality of two-dimensional images, and

said 2D/3D conversion unit converts two-dimensional image data obtained through synthesis by said second synthesis unit into three-dimensional image data, converting two-dimensional data into three-dimensional image data by the 2D/3D conversion unit including thinning a horizontal resolution of the two-dimensional data to $1/n$ when a number of viewpoints for the three-dimensional image is n *and duplicating each thinned image to generate two images*, wherein

...

Lipton et al. does not disclose or suggest that converting two-dimensional data into three-dimensional image data including thinning a horizontal resolution of the two-dimensional data to $1/n$ when a number of viewpoints for the three-dimensional image is n *and duplicating each thinned image to generate two images* (see page 37, lines 8-18 of the present application). What Lipton et al. discloses is thinning the master images and then combining the thinned master images into the final image having the full screen resolution. Osaka et al., Iizuka et al., Akamatsu, and Ellson et al. also do not disclose or suggest the feature of duplicating each

thinned image to generate two images. Therefore, claims 14-21, as amended, are patentable over Osaka et al., Iizuka et al., Akamatsu, Lipton et al. and Ellison et al.

IV. In view of the above, the allowance of claims 1-11 and 14-21, as amended, is respectfully solicited.

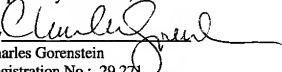
CONCLUSION

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Edward J. Wise (Reg. No. 34,523) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

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